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may never fill (a viable seed may never develop within the outer covering of the seed). Before harvesting a site, seedheads should be sampled for fill and germination rate, to determine economic feasibility of harvest. A seed which has filled is plump and very brittle and will snap when bent. An unfilled seed is very soft and pliable, and will not snap or break when bent. Light seed weight and awns make harvest with conventional equipment difficult. Native stands of wiregrass have been harvested successfully by the FLPMC with the Flail-Vac Seed Stripper.

Seed Germination and Conditioning. Seed viability varies widely, depending on climatic conditions, burn management and collection site. Laboratory germination tests conducted at the FLPMC on Florida accessions produced germination rates of 0 to 48%. Greenhouse germination rates averaged 32%. Parrott (1967), working with North Carolina wiregrass populations, conducted several germination experiments. He found that this population of wiregrass germinated between 58 - 103° F, with optimum germination occurring between 85 - 95° F. He also found that one-year-old seed germinated more quickly than new seed which may indicate some dormancy.

Seed can be debarbed using a debarber or hammermill. An air-screen cleaner can then be used to separate seed from chaff. Wiregrass seed is brittle and easily damaged in the debarbing process.

The shelf life of wiregrass appears to be three or more years under ideal conditions (45-55° F and 45-55% humidity). A gray fungus is often observed on wiregrass seed; however, its effect on seed viability is unknown.

Propagation by Seed. Care should be taken to collect seed from habitats with the same

moisture regime as the planting site. There is some evidence that seed harvested from flatwoods sites establishes best on moist sites, and seed gathered from sandhill sites establishes best on drier sites. More research will need to be conducted to determine if this is in fact the case.

Wiregrass has been direct seeded on a variety of sites throughout Florida, with mixed success (Bissett 1996; see also Appendix A). Seedlings lack vigor, and germination and establishment are severely inhibited by weed competition. Introduced pasture grasses out-compete wiregrass seedlings; therefore, planting sites should be as free of weeds and introduced grass species as possible.

Cultural Management. It has been well established that wiregrass must undergo a growing season burn to flower and produce viable seed (Seamon and Myers, 1992). However, the month of burning appears to have a profound impact on seed viability. Seed viability appears to be highest when native stands of wiregrass are burned during the months of May through July (personal correspondence with Tim Pittman, FL Division of Forestry).

The FLPMC personnel have observed that a sandhill site in central Florida burned in February, flowered abundantly, however seed viability was 0%. When this site was burned in early May, germination increased to 2%. A similar nearby site burned in late June had a germination rate of 12%. Aside from burning dates, climate and available soil moisture appear to have a strong influence on seed production. Wiregrass populations in flatwoods areas that had undergone growing season burns had much higher germination rates than those listed above for the sandhill sites.

## Wiregrass

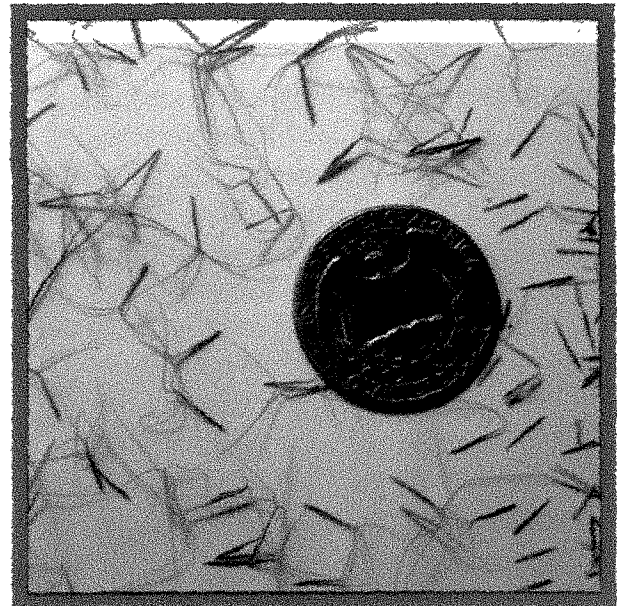
*Aristida stricta* Michx.

[Florida populations were recently recognized as a separate species, *Aristida beyrichiana* Trin. & Rupr., by some botanists]

Other Common Names: Pineland threeawn

### Description and Growth Characteristics.

Cool season perennial bunchgrass. **Leaf blades** are narrow and rolled inward (wire-like) 12 to 20 inches long. Vegetative growth begins late winter. This species can be distinguished from *Muhlenbergia capillaris* and *Sporobolus iunceus* species by the small tuft of hair at the upper side of the leaf blade, where it meets the leaf sheath.



**Seed stalks** are 1 to 3 feet tall. The **seedheads** are a panicle, 10 to 12 inches long. Spring and early summer burning induces flowering. Seed is ripe in November and December. The collection window lasts several weeks.

Habita.: Adapted to a broad range of soil and moisture regimes, from wet flatwoods to longleaf pine-turkey oak sandhills.

Uses: Wiregrass is considered an important component of pineland habitats because of its ability to carry fire. In native situations, wiregrass contributes a large percentage of the fuel for understory burn management programs. New growth is readily grazed by livestock after a burn. Wiregrass also provides cover and nesting sites for wildlife (Sharpe and Curtis, 1988).

Seed Collection: Ripe seed are cylindrical in shape, 1/4 inch long or less, and less than 1/16 inch wide with three awns (1/4 inch long or more) attached at one end. If burned during the growing season, wiregrass will often flower prodigiously producing an abundance of seed. However, these seed

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**Pfaff and Mary Anne Gonter**

**Wm. J. Maura Jr., Technical Editor**

**Department of Agriculture  
Natural Resources Conservation Service  
National Technical Center  
1111 G Street  
Vero Beach, FL 34601  
600**

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**Institute of Phosphate Research  
1111 Vest Main Street  
Vero Beach, Florida 33830-7718  
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# Florida Native Plant Collection, Production and Direct Seeding Techniques: Interim Report

